

## 2013 AP Calculus AB Summer Institute Syllabus

### July 22 –25, 2013

**Institute Overview:** In this workshop, participants will examine ways to present calculus topics using multiple representations and learn how to develop student understanding of calculus concepts. They will learn what to teach, how to teach it and methods for assessing student understanding. Participants will also discuss ways to prepare students for the AP Calculus AB exam.

**Consultant Background:** **Dixie Ross** teaches AP Calculus at Pflugerville High School in Pflugerville, Texas. She has served as an AP consultant for summer institutes and other teacher professional development workshops since 1994 and has been a reader for the AP Calculus exam. Ms. Ross served on the development committees for the Math Vertical Teams Guide and the Laying the Foundation project. She received the College Board's Southwestern Region AP Special Recognition award in 1992, the Siemens Award for Advanced Placement and the Texas Excellence award for outstanding high school teachers. In 2008, Ms. Ross was a finalist for the O'Donnell Texas AP Teacher of the Year award and was recognized as a Math Hero by the Raytheon Company for her efforts to involve more students in advanced mathematics. She received the Presidential Award for Excellence in Mathematics and Science Teaching in 2012 from President Obama. She is a National Board Certified Teacher and holds a BA and a BS from The University of Texas at Austin.



#### Contact Information

[dixross@austin.rr.com](mailto:dixross@austin.rr.com) or [Dixie.Ross@pfisd.net](mailto:Dixie.Ross@pfisd.net)

Mailing Address: 7516 Meadowview Lane, Austin, TX 78752

Phone Numbers: (512) 459-1963 H or (512) 594-0500 W or (512) 736-4476 C

#### Institute Preparation

You might choose to explore AP Central and read the [Teacher's Guide for AP Calculus](#). You might choose to bring your assigned textbook, a graphing Calculator, notebook paper and sticky notes.

#### Institute Schedule

**Day 1:** Introduction to AP Calculus, Limits and Continuity, Derivatives and  $f$ ,  $f'$ ,  $f''$  relationships

**Day 2:** Justification of Extrema, Theorems, Implicit Differentiation, Related Rates and Introduction to the Definite Integral

**Day 3:** Motion, Area/Volume, Data-Based Questions, Interpreting Calculus, Scoring Free Response questions

**Day 4:** More scoring, Functions Defined by Integrals, Accumulating Rates of Change, Slopefields and Differential Equations

**Graduate Credit Option**

Participants may also earn three graduate education hours for any of the AP Summer Institutes from Washburn University for a reduced tuition rate the successful completion of an academic assignment.

**Additional Information**

Timothy W. Peterson, Ph.D.  
Dean of Academic Outreach  
Washburn University  
1700 College Avenue  
Topeka, KS 66621

[tim.peterson@washburn.edu](mailto:tim.peterson@washburn.edu)

(785) 670-1399 voice

(785) 670-1028 fax